

NASA's Wallops Flight Facility

Operational Highlights, Talking Points and Key Messages

As of December 2012

NASA's Wallops Flight Facility is the nation's premiere site for management and conduct of suborbital and small-class orbital missions and home to NASA's only launch range.

In addition to its on-going missions, Wallops also has several near-term opportunities for expansion and economic development in the area. These include an expansion of its aircraft fleet, use of Wallops for unmanned aerial systems based research, support of the Navy Field Carrier Landing Practice for turboprop aircraft, launch of small- to medium-class launch vehicles and the development of the Wallops Research Park.

2012 Operational Highlights

ATREX: March 27, 2012, NASA Wallops launched 5 rockets in approximately 5 minutes as part of the Anomalous Transport Rocket Experiment (ATREX). The purpose of the experiment was to gather information needed to better understand the process responsible for the high-altitude jet stream located between 60 and 65 miles above the surface of the Earth. The winds found in that region typically have speeds of 225 to 335 mph and create rapid transport from mid-latitude to polar regions.

IRVE III: The Inflatable Re-Entry Vehicle Experiment-3 (IRVE-3), developed at NASA's Langley Research Center, flew on a Black Brant XI suborbital sounding rocket from Wallops July 23, 2012. The mission, the third in a series, demonstrated that lightweight inflatable structures could become practical tools for exploration of other worlds or a way to safely return items from the International Space Station to Earth.

HS3: Wallops played a key role in NASA's 2012 hurricane science field campaign by flying an unmanned Global Hawk aircraft over hurricanes and tropical storms as part of the Hurricane and Severe Storm Sentinel (HS3) mission. The flights from Wallops marked the first time NASA flew Global Hawks from the U.S. East Coast. Overall, the mission targets the processes that underlie hurricane formation and intensity change. Additional HS3 flights are scheduled from Wallops during the 2013 and 2014 hurricane seasons, each with a duration up to 28 hours.

Shoreline Protection and Hurricane Sandy: In early August 2012, NASA in cooperation with the U.S. Army Corps of Engineers completed the first stage of a multi-million dollar project to protect the more than \$1 billion in NASA, U.S. Navy and Commonwealth of Virginia assets located on Wallops Island. NASA extended the rock seawall 1,800 feet and pumped 3.2 million cubic yards of sand along 20,000 feet of the island's shoreline. The beach successfully protected Wallops Island assets during Hurricane Sandy in October 2012, but at a cost of about 20 percent of the beach and about 700 feet of berm. NASA officials are working to replenish the beach in the wake of the superstorm.

2013 Operational Highlights

Antares: Orbital Sciences Corporations' Antares rocket began operations from NASA's Wallops Flight Facility and the Mid-Atlantic Regional Spaceport in 2012 with launch vehicle rollout and wet dress rehearsal. Orbital plans to conduct a test flight of the Antares rocket in early 2013 as well as up to three missions for NASA under the agency's Commercial Orbital Transportation Services project and Commercial Resupply Services contract.

LADEE: The Lunar Atmosphere and Dust Environment Explorer (LADEE) mission is scheduled to launch from Wallops in August 2013. LADEE is a robotic mission that will orbit the moon to gather detailed information about the lunar atmosphere, conditions near the surface and environmental influences on lunar dust. LADEE's launch will be the first payload to launch on a U.S. Air Force Minotaur V rocket integrated by Orbital Sciences Corp. and the first deep space mission to launch from NASA's Wallops Flight Facility.

Wallops Talking Points:

- Wallops Flight Facility is home to NASA's suborbital program with four key mission areas: Sounding Rockets, Airborne Science, Scientific Balloons, and the Wallops Launch Range

- 20-30 sounding rocket launches each year from Wallops and other U.S. and international launch sites
- 15-20 scientific balloon missions each year from sites in the U.S. and around the world
- The Wallops main base houses a research airport, engineering and science staff, labs, rocket storage areas, radar and telemetry facilities, and command centers
- Wallops was established in 1945 by the National Advisory Committee for Aeronautics as a test site for aerodynamic research
- First launch: June 27, 1945—WFF has conducted more than 16,000 launches since then
- WFF budget: About \$218 million (FY12)
- Workforce: 270 NASA civil servants; 800 contractors (about 55 percent live in Virginia)
- Estimated economic impact: about \$396 million; > 3,100 jobs
- 6,000 acres on Virginia's Eastern Shore
- Wallops Island (7 miles south of main base): six launch sites, supporting facilities, and the Navy's Surface Combat Systems Center
- Navy and NASA assets estimated at about \$1.2 billion
- Key tenants and partners: Navy, National Oceanic and Atmospheric Administration, Mid-Atlantic Regional Spaceport, Marine Science Consortium, U.S. Coast Guard, U.S. Fish and Wildlife Service, and the National Park Service
- Science research in global precipitation, ice masses and climate change, atmospheric chemistry and the coastal zone

Wallops Key Messages:

- Wallops provides the expertise, facilities, and carriers to enable rapid, frequent, low-cost flight opportunities for a diverse customer base
- The Wallops Range provides efficient, responsive, and reliable Launch Range Operations for NASA and the nation, meeting current and future customer needs through innovative partnering, cutting-edge technology development, and expanded instrumentation and mission support capabilities
- Wallops is home to NASA's only owned and operated launch range, providing safety, area clearance, tracking and telemetry, and logistical support to range users
- Wallops, Orbital Sciences Corp., and the Mid-Atlantic Regional Spaceport comprise a key partnership in enabling efforts to ensure American companies are launching our astronauts and their supplies from the United States
- Wallops is a world-class center for program management, technology development, and scientific research
- Wallops Flight Facility provides hands-on STEM opportunities to inspire and train the next generation of scientists, engineers, and technologists



LAUNCH RANGE SERVICES - MISSION FORMULATION - PROJECT MANAGEMENT - TECHNOLOGY DEVELOPMENT

INTERNATIONAL SPACE STATION
205-250 miles

SOUNDING ROCKETS
Up to 900 miles

BALLOONS
Up to 120,000 feet

UAV
Up to 65,000 feet

AIRBORNE SCIENCE
Up to 30,000 feet

EXPENDABLE LAUNCH VEHICLE
Low-earth orbit

**OCEAN TO THE MOON
Wallops
DELIVERS**

OPERATIONAL SITES

- FAIRBANKS
- KODIAK
- FORT SUMNER
- KAUAI
- PALESTINE
- DOQUINA
- WALLOPS
- BERWUDA
- ALCANTARA
- McMURDO
- GREENLAND
- NORWAY
- SWEDEN
- ALICE SPRINGS
- VIDOMERIA
- KWAJALEIN

IN-SITU SCIENCE

ENGINEERING - ORBITAL TRACKING - EARTH AND OCEAN SCIENCE - SAFETY - EDUCATION

www.nasa.gov

WALLOPS FLIGHT FACILITY

Reaching farther for science and technology



Our Mission

Wallops powers scientific discovery and technology through unique access to space

Wallops provides unique expertise, facilities, and carriers to enable rapid response, frequent, low-cost flight opportunities for a diverse customer base

Our Vision

Extending NASA's reach for science and technology

Enhance capabilities and increase number of flight opportunities for science and technology development

Produce world-class science focused on earth science, sky-to-sea and coastal zone research

Advance high-quality STEM education using Wallops' unique flight capabilities

Serve as the nation's premier test and operational range offering safe, flexible, efficient access to suborbital and orbital flight operations at Wallops and around the world

Facility

6,000 acres on Virginia's Eastern Shore

NASA's only owned and operated launch range

More than 16,000 launches since 1945 with 20-30 sounding rocket launches a year

15-20 balloon launches a year and two research airports

Economic Impact

NASA budget: \$218M (FY12)

NASA workforce: 270 NASA civil servants, 800 contractors

Tenant workforce: 500 personnel (Navy, NOAA, MARS, industry)

Estimated regional economic impact: \$396M, 3,100 jobs

Partners

Navy

NOAA

Mid-Atlantic Regional Spaceport

Marine Science Consortium

U.S. Coast Guard

www.nasa.gov/wallops

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